UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Ilias Manettas et al
Application Number:	Unassigned
Filing Date:	Concurrently Herewith
Group Art Unit:	
Examiner:	
Title:	REFRIGERATION DEVICE AND OPERATING METHOD FOR SAME

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

In accordance with 37 C.F.R. 1.98, I am submitting a completed "INFORMATION DISCLOSURE STATEMENT BY APPLICANTS" *(Form PTO/SB/08A)* with patents and/or publications as delineated therein attached.

JP 2001263912 discloses a method to provide a refrigerator in which power consumption is suppressed. This refrigerator comprises a storage compartment formed internally, a cooler for cooling the storage compartment, a cooler compartment having the cooler on the inside, a chill passage for supplying air in the cooler compartment to the storage compartment, a defrost heater for melting frost adhering to the cooler, a first temperature detecting means for detecting the temperature of the cooler, and a second temperature detecting means for detecting the temperature in the chill passage, and has a function for conducting the defrost heater when the difference between the temperature of the cooler and the temperature in the chill passage is higher than a specified level.

JP 2002090035 discloses a method to provide a refrigerator with a means for automatically detecting frost therein and efficiently defrosting the same based on frost detecting information. The refrigerator comprises at least two temperature sensors T1 and T2 arranged at intervals one after another from the surface of an evaporator 12 along the growing direction of frost 15, a blower 14 for feeding air in the refrigerator to the portion where the

temperature sensors T1 and T2 are installed and a means for comparing values detected by the temperature sensors T1 and T2.

JP 2001215077 discloses a method to solve a problem of not defrost of an evaporator due to a decrease in a cooling efficiency of the evaporator by frosting when frosted according to an integrated time of a compressor and a wasteful power consumption due to a defrosting operation for a predetermined time even by a small frost. Temperature detectors of two systems are mounted at the evaporator, and the defrosting operation is controlled by judging an actually frosted state according to their temperature difference. The lapse of a predetermined cooling time is confirmed (S2) during the operation of the compressor (S1). When the temperature difference of the two systems is a predetermined value or less or a predetermined defrosting period interval or more by judging the difference (S3), a power supply to the defrosting heater 7 is started (S4). Then, a set temperature or higher of the evaporator is confirmed by a sensor (S5). The power supply to the heater 7 is finished (S6), and the operation is returned to the cooling operation. Since the defrosting control is conducted by the actually frosted state of the evaporator, wasteful power consumption can be reduced, and a sound indoor temperature management can be conducted.

JP 2000180022 discloses a method to provide a frost detecting device for a cooler to accurately detect the frost state of the cooler until an amount of frost is increased. When no frost forms on a cooler 2 or when an amount of frost is low, the detecting temperature of a first temperature detector 13 is increased to a value higher than that of a second temperature detector 15 due to air effecting inflow through the opening part of a detector containing part 12, and a temperature difference is produced between temperature detectors 13 and 15. In this case, the first temperature detector 13 is arranged by a support plate 14 in a position spaced away from the surface of the cooler 2 by a given distance L. Since the second temperature detector 15 makes thermal contact with the cooler 2 through the support plate 14, a sufficient temperature difference is produced between the temperature detectors 13 and 15 and based on the temperature difference, a frost amount is detected.

JP 2001133124 discloses that to provide a frost detector for cooler in which frost can be detected accurately at all times regardless of the temperature of air flowing into the cooler side or the temperature of the cooler, the frost detector for cooler comprises a first temperature detector 12 for detecting the temperature of air flowing along the surface of a cooler 2, a second temperature detector 14 for detecting the temperature on the surface of the cooler 2, and a third temperature detector 15 for detecting the temperature of air flowing into the cooler 2. A decision is made whether the ratio of temperature difference between the first

and third temperature detectors 12, 15 to temperature difference between the first and second temperature detectors 12, 14 is 1:1 or above. When the inside of a cold insulation box is cooled sufficiently and the temperature of air flowing to the cooler 2 side is higher than a normal level, or when the temperature of the cooler 2 is higher than a normal level due to drop of cooling capacity caused by thawing, frost state is determined based on these temperatures and the relative temperature difference.

WO02/35165 discloses that the invention relates to a refrigerating device comprising a refrigeratory (3) arranged on a refrigerating chamber (2), a first sensor (5) for detecting the temperature of the refrigerating chamber (3), a second sensor (6) for detecting the temperature(Tv) of the refrigerating agent, a third sensor (7) for detecting the external temperature (Te), a heating device (9) for the refrigeratory (3) and a control device (8) for operating the heating device (9) according to the temperatures (Ti, Tv) measured by the first and second sensors (5,6). The control device (8) activates the heating device (9) if the temperature (Tv) measured by the second sensor (5,6) falls below a threshold value (Tlim) which is set according to the temperatures (Ti, Te) measured by the first and third sensors (5, 7).

JP11094437 discloses a method to provide a frosting detector, small in size, stable with respect to environmental conditions, prominent in frost detecting accuracy and excellent in reproducibility. A frosting detector, installed in refrigerating and freezing equipments, is provided with a base table 1, fixed to a cooling pipe or the like, at least two sets of screen type members 2a, 2b, arranged on the base table 1 so as to be approximated, and a heat sensitive element 4, arranged so as to be surrounded by the screen type members 2a, 2b and lower in height than the screen type members 2a, 2b while inserted into a protective tube 3, projected out of the base table 1, to fix the same. When frost is adhered to a part near the screen type members 2a, 2b and the heat sensitive element 4, inserted and fixed in the protective tube 3, is surrounded by the frost, a temperature change is generated in the environmental atmosphere of the heat sensitive element 4 whereby frosting can be detected through the detection of the temperature change.

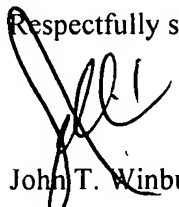
DE 31 28 758 discloses that in order to carry out defrosting of the evaporator plate in refrigerators only in the case of ice formation, a method of controlling the automatic defrosting of the evaporator plate in refrigerators and the like, the evaporator plate being supplied heat briefly for defrosting and the internal temperature of the cooling space being constantly measured, is proposed, in which the temperature of the evaporator plate is measured in the rest phase of the cooling compressor and compared with the temperature

measurement value of the cooling space, and heat is supplied to the evaporator plate only in the case of measurement value differences caused by icing.

JP 10227555 discloses a method to determine the optimum defrosting timing by a method wherein the amount of frosting of a cooler is estimated based on the temperature of the cooler and the ambient temperature of the same to determine the defrosting timing. A frosting detecting sensor 12 is constituted of a cooler temperature detecting unit, detecting the temperature of a cooler, an ambient temperature of cooler detecting unit, detecting the ambient temperature of the cooler, and a contacting unit with the cooler. A cooler temperature sensor 12a is accommodated in the cooler temperature detecting unit while an ambient temperature of cooler sensor 12b, contacted with ambient air, is accommodated in the ambient temperature of cooler detecting unit. When the adhesion of frost to the circumference of the ambient temperature of cooler detecting unit is started, the difference of detecting temperatures between the cooler temperature sensor 12a and the ambient temperature of cooler sensor 12b is reduced gradually. Utilizing the fact, the actual amount of adhesion of frost to the cooler is estimated from the change of detecting temperature difference between the cooler temperature sensor 12a and the ambient temperature of cooler sensor 12b whereby the optimum defrosting timing is determined.

If no translation of pertinent portions of any foreign language patents or publications mentioned within the "INFORMATION DISCLOSURE STATEMENT BY APPLICANTS" is included with the aforementioned copies of those applications, patents and/or publications, it is because no existing translation is readily available to the Applicants. As per the Notice in 1273 OG 55 (August 5, 2003) no copies of any above-mentioned US patents and US patent application publications are submitted for this application which was filed after June 30, 2003.

Respectfully submitted



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PTO/SB/08A (08-03)
Approved for use through 07/31/2006. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 3

Complete if Known	
Application Number	Unassigned
Filing Date	Herewith
First Named Inventor	Ilias Manettas
Art Unit	
Examiner Name	
Attorney Docket Number	2003P00533WOUS

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 4,843,833	07-04-1989	John Polkinghorne	
		US- 4,345,441	08-24-1982	Borge M. Hansen	
		US- 6,467,282	10-22-2002	Patrick D. French	
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		JP 2001263912	09-26-2001	Shibata Koichi		
		JP 2002090035	03-27-2002	Igawa Minobu		
		GB 2 133 867	8-1-1984	David Sedger Llewelyn		✔
		JP 2001215077	08-10-2001	Nakamura Hideyuki		
		JP 2000180022	06-30-2000	Kobayashi Makoto		
		JP 2001133124	05-18-2001	Kobayashi Makoto		

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

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		EP 0 494 785	07-15-1992	Michael Morris		✔
		GB 1 404 210	08-28-1975	N.V. Phillips Gloeilampe		✔
		WO 01/22014	03-29-2001	Halime Usta		✔
		WO 02/35165	05-02-2002	Hans-Georg Reisinger		
		JP 11094437	04-09-1999	Ito Kenji		
		DE 31 28 758	2-10-1983	Heinz Salzmann		

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		EP 0 881 442	12-02-1998	Toshiyuki Nojiri		✓
		EP 0 871 002	10-14-1998	Shinichi Saito		✓
		JP 10227555	08-25-1998	Kawaguchi Toshiaki		
		International Search Report PCT/EP2004/003609				✓

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